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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,058	08/30/2000	Shoutarou Yoda	107156-00019	1169

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EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 08/01/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,058

Applicant(s)

YODA, SHOUTAROU

Examiner

Daniel A. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) See Continuation Sheet is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continuation of Disposition of Claims:

Claims rejected are 1-2 (and 5-6 if dependent), 7-8 (and 11-12 if dependent), 13-14 (and 17-18 if dependent).

Continuation of Disposition of Claims:

Claims objected to are 3-4 (and 5-6 as dependent), 9-10 (and 11-12 as dependent) and 15-16 (and 17-18 as dependent).

DETAILED ACTION

(Note that this application has been included in **Art Unit 2654**,
and that this AU number should be used in all future correspondence.)

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Amendment

2. The response filed 02 May 2003 was applied to the effect that the claims were changed as indicated and the objections are withdrawn as satisfied.

Response to Arguments

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

Everhart & Valve

4. Claims 1, 7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everhart (U.S. Patent 6,230,138) in view of Valve (U.S. Patent 6,449,593).

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5. Regarding claims 1, 7 and 13; Everhart discloses:

- *Speech recognition having a plurality of voice pickup means for picking up uttered voices* (42-44, figure 1) and
- *Speech recognition means for performing speech recognition based on speech signal determined by said determination means* (90-92, figure 5).
- Everhart uses mechanical means to determine which speaker is active, so does not meet the required means specified. Valve (102 & 104 in figure 1) reads on the feature of providing *determination means for determining a speech signal suitable for speech recognition from speech signals output from said plurality of voice pickup means* (as in claim 3, using power and noise level estimation – which constitutes a *threshold* – to establish a *speech-to-ambient noise ratio* to determine the most favorable detection direction source).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Valve to the device/method of Everhart to operate equally well when background noise increases whether a speaker either tries to talk over it or wait for it to abate.

Everhart, Valve & Fedele

6. Claims 2, 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everhart in view of Valve and further in view of Fedele (U.S. Patent 4,627,091).

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7. Regarding claim 2, 8 and 14; the claims are set forth with the same limits as claims 1, 7 and 13, respectively.

- While Everhart processes *speech signals output from said plurality of voice pickup means* (ibid.) for which *speech discrimination* is requisite (78 in figure 4), he does not disclose any specific component dedicated to that function for the feature of processing.
- Fedele teaches the well-known feature that a signal with a *speech level equal to or higher than a predetermined speech level* (threshold or trigger, column 1 lines 27-32 & column 3 line 33) *and continues over a predetermined period of time is determined as said speech signal suitable for speech recognition* (illustrated by figure 1).
- It would have been obvious for Everhart to employ the well-known criteria disclosed by Fedele to limit processing to actual voice and therefore avoid excessive attempts to resolve mis-recognized commands triggered from background noise anomalies.

Everhart, Valve, Fedele & Bowen

8. Claims 5, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everhart, Valve and Fedele as applied to claims 1-2, 7-8 and 13-14 above, and further in view of Bowen (U.S. Patent 5,561,737).

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9. With regard to claim 5 (as depending on claims 1 or 2), claim 11 (as depending on claims 7 or 8) and claim 17 (as depending on claims 13 or 14); the claims are set forth with the same limits as claims 1-2, 7-8 and 13-14, respectively. All the prior art of record contain a discrimination function that *treats those of said speech signals which are other than said speech signal suitable for speech recognition as noise signals*, as:

- Everhart (column 5 lines 40-54)
- Bowen (column 8 line 66 to column 9 line 1)
- Fedele would simply disregard non-speech (column 3 lines 28-37) with the well-known shared objective of all references being to differentiate between commands and noise.

Everhart, Valve & Fedele

10. Claims 6, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Everhart in view of Valve and further in view of Fedele.

11. With regard to claim 6 (as depending on claims 1 or 2), claim 12 (as depending on claims 7 or 8) and claim 18 (as depending on claims 13 or 14); the claims are set forth with the same limits as claims 1-2, 7-8 and 13-14, respectively. The feature defining that the unsuitability of *other speech signals (than said speech signal suitable for speech recognition, that speech signal) whose average S/N value and average voice power become minimum is treated as a noise signal by said determination means* is well-known in the art of speech signal processing as taught by Fedele (column 2 lines

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13-18) which would have made it obvious to Everhart to incorporate the teachings of Fedele at the time of the invention to identify and process levels as noise so as to provide continuity for complex command sequences.

Allowable Subject Matter

12. Claims 3-4, 9-10 and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 5-6 (as they depend from claims 3 or 4), claims 11-12 (as they depend from claims 7 or 8) and claims 17-18 (as they depend from claims 5 or 16) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

- Selection of a dominant microphone of an array by comparative means would be done were Everhart to employ the means of the closest prior art, of Bowen (U.S. Patent 5,561,737).
- With regard to claims 3, 9 and 15 as understood by the Examiner, the featured means of *acquiring an average S/N value and average voice power of each of*

*said speech signals output to **select** [determine that of] said speech signal whose average S/N value and average voice power are greater than respective predetermined threshold values* is neither anticipated nor was it found in obvious combination in the prior art of record.

- Claims 4, 10 and 16 depend on claims that have been found to be allowable and so are they allowable as a consequence.
- Claims 5-6 (when depending on claims 3 or 4), claims 11-12 (when depending on claims 9 or 10) and claims 17-18 (when depending on claims 15 or 16) would under those conditions all depend on claims that have been found allowable and so would they themselves allowable under the circumstances.

15. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Furukawa (Japanese Patent 02-077799) determines speech by SNR.
- Flanagan et al (U.S. Patent 5,737,485) selects microphones for a speaker.

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17. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,


or mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or hand-delivered to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan
Examiner
Art Unit 2654

DAN/d
July 25, 2003


Richemond Dorvil
Primary Examiner